REMARKS

Applicant thanks the examiner for a thorough search. By this amendment, the abstract, the title, and the claims 1-2, 12, 21, 23-26, 32-33, and 35 have been amended. Claim 22 has been canceled. No claims have been added. Claims 1-21 and 23-35 are pending in the application. No new matter has been added to this application. Furthermore, amendments made to the claims 24-26 and 32 as indicated herein have been made to only reflect the cancellation of claim 21 and not for the purpose of overcoming alleged prior art.

Each issue raised in the Office Action mailed October 2, 2003 is addressed hereinafter.

I. ISSUES NOT RELATING TO PRIOR ART

A. DRAWINGS

The objection for lack of formal drawings is noted. Applicant will submit new formal drawings after the application is allowed.

B. ABSTRACT

The abstract of the disclosure is objected to because it exceeds 150 words in length. The abstract has been amended to conform to the requirements as set forth in 37 CFR 1.72.

C. TITLE

The title of the disclosure is objected to because it is different from the title on record. The title of the disclosure has been amended to conform to the title on record, "Fast Recovery Extended Method and Apparatus."

II. ISSUES RELATING TO PRIOR ART

A. CLAIMS 1, 3-8, 11-16, 19, and 20

Claims 1, 3-8, 11-16, 19, and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by RFC2582. The rejection is respectfully traversed.

A.1 CLAIMS 1, 3-8, 11-16, and 19.

Applicant respectfully submits that RFC2582 does not anticipate the amended independent claims 1 and 12, because RFC2582 does not disclose the claimed retention of "an excess number of duplicate acknowledgements .... upon receiving acknowledgement of receipt of new data" (amended claims 1 and 12). RFC2582 defines an experimental protocol for the Internet community, where it modifies the standard implementation of the Fast Retransmit and Fast Recovery algorithms given in RFC2581 (Section 3 of RFC2582, lines 1-4). As indicated in the present application, prior art approaches, such as RFC2581 and RFC2582, set the number of duplicate acknowledgements to zero when a TCP sender receives a non-duplicate acknowledgement (present application, page 4, lines 22-26). In other words, the method described in RFC2582 does not retain an excess number of duplicate acknowledgements after the TCP sender is notified of a TCP receiver's receipt of new data.

Moreover, RFC2582 does not disclose the method of "determining ... an excess number of duplicate acknowledgements" as claimed in the amended claims 1 and 12. According to one embodiment of the present invention, an excess number of duplicate acknowledgements are derived from the inflation in congestion window **cwnd** and the total number of acknowledged segments (present application, page 19, lines 17-24).

Thus, for at least the reasons discussed above, the amended claims 1 and 12 are patentable over RFC2582. Because claims 3-8, 11, 13-16, and 19 depend either directly or indirectly to the claims 1 and 12, they are also patentable over RFC2582.

A.2 CLAIM 20

Applicant respectfully submits that RFC2582 does not anticipate the independent claim 20, because RFC2582 does not disclose the claimed "TCP fast recovery process" and "TCP fast recovery extended process." The Office Action asserts that the performance of step 5 in section 3 of RFC2582 corresponds to the recited "performing a TCP fast recovery extended process"

(Office Action, page 7, item 26). This is incorrect. Instead, step 5 is part of a single fast recovery process, or the Fast Retransmit and Fast Recovery algorithms in NewReno in RFC2582, and is not itself a separate recovery process. In addition, the claimed "TCP fast recovery extended process" involves features that are not disclosed in RFC2582. Some examples of the features include, without limitation, determining and retaining an excess number of duplicate acknowledgements and taking a network packet transmission recovery action based on such an excess number (present application, page 12, lines 11-38, page 13, lines 1-31).

Thus, for at least the reasons discussed above, the claim 20 is patentable over RFC2582.

B. CLAIMS 2, 9, 10, 17-18, 21-31, 34, and 35

Claims 2, 9, 10, 17-18, 21-31, 34, and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable over RFC2582 in view of Chapman et al., U.S. Patent No. 6,493,316 B1 ("Chapman"). The rejection is respectfully traversed.

Applicant respectfully submits that the Office Action fails to factually support any *prima facie* case of obviousness. Specifically, the Office Action and the references cited by the examiner fail to set forth any suggestion or motivation to modify the references or to combine reference teachings.

B.1 CLAIMS 2 and 23

The Office Action asserts that RFC2582 discloses a method of "determining an excess number of duplicate acknowledgements" (Office Action, page 8, item 29). This is incorrect. As discussed in section A.1 above, RFC2582 does not disclose such a method. Similarly, the Office Action erroneously asserts that Chapman discloses a method of "determining whether a congestion window is inflated prior to said determining an excess number of duplicate acknowledgements" (Office Action, page 8, item 29), because Chapman also fails to describe any method of determining excess number of duplicate acknowledgements. Furthermore,

Chapman does not describe the claimed method of "determining whether a congestion window is inflated prior to deciding whether to determine said excess number of duplicate acknowledgements" in the amended claims 2 and 23. Instead, Chapman only discloses inflating the window after the receipt of a non-duplicate ACK (Chapman, col. 5, lines 33-34) and does not teach any logic for deciding whether to proceed with the excess number determination. Thus, for at least the reasons detailed above, neither RFC2582 nor Chapman provides any suggestion or motivation to modify or combine the two references to render the claims 2 and 23 unpatentable.

B.2 CLAIMS 9, 17, and 30

As discussed in section B.1 above, neither RFC2582 nor Chapman teaches any method of determining an excess number of duplicate acknowledgements. Without establishing this excess number, the two references also do not disclose any method of comparing "excess number of duplicate acknowledgements with a duplicate acknowledgement threshold" (Office Action, page 9, item 30). Instead, Chapman arguably discloses performing a comparison between a count of consecutive duplicate acknowledgements, not an excess number of duplicate acknowledgements, and a threshold. Thus, for at least the reasons detailed above, neither RFC2582 nor Chapman provides any suggestion or motivation to modify or combine the two references to render the claims 9, 17, and 30 unpatentable.

B.3 CLAIM 21

The Office Action asserts that RFC2582 discloses a "fast recovery extended method" (Office Action, page 10, item 32). This is incorrect. As discussed in section A.2 above, RFC2582 does not disclose such a method. Similarly, the Office Action erroneously asserts that Chapman discloses a memory "storing a fast recovery extended method" (Office Action, page 10, item 32). Applicant respectfully submits that none of the figure elements and the text description cited in the Office Action describes the claimed "fast recovery extended method" in

the present application. Thus, for at least the reasons detailed above, neither RFC2582 nor Chapman provides any suggestion or motivation to modify or combine the two references to render the claim 21 unpatentable.

B.4 CLAIMS 10, 18, 24-29, and 31-32

For at least the reasons detailed in sections B.1 – B.3 above and because the claims 10, 18, 24-29, and 31-32 depend either directly or indirectly to the claims 2, 9, 17, 21, 23, and 30, these claims are patentable over the RFC2582 and Chapman references.

B.5 CLAIMS 33 and 34

For at least the reasons detailed in sections B.1 – B.3 above, the claims 33 and 34 are patentable over the RFC2582 and Chapman references.

III. CONCLUSIONS & MISCELLANEOUS

For at least the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

Respectfully submitted,
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Dated: 12/31/03

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Box 1450, Alexandria, VA 22313-1450

on 12/31/03 by Clare Fung